

FIG 2.

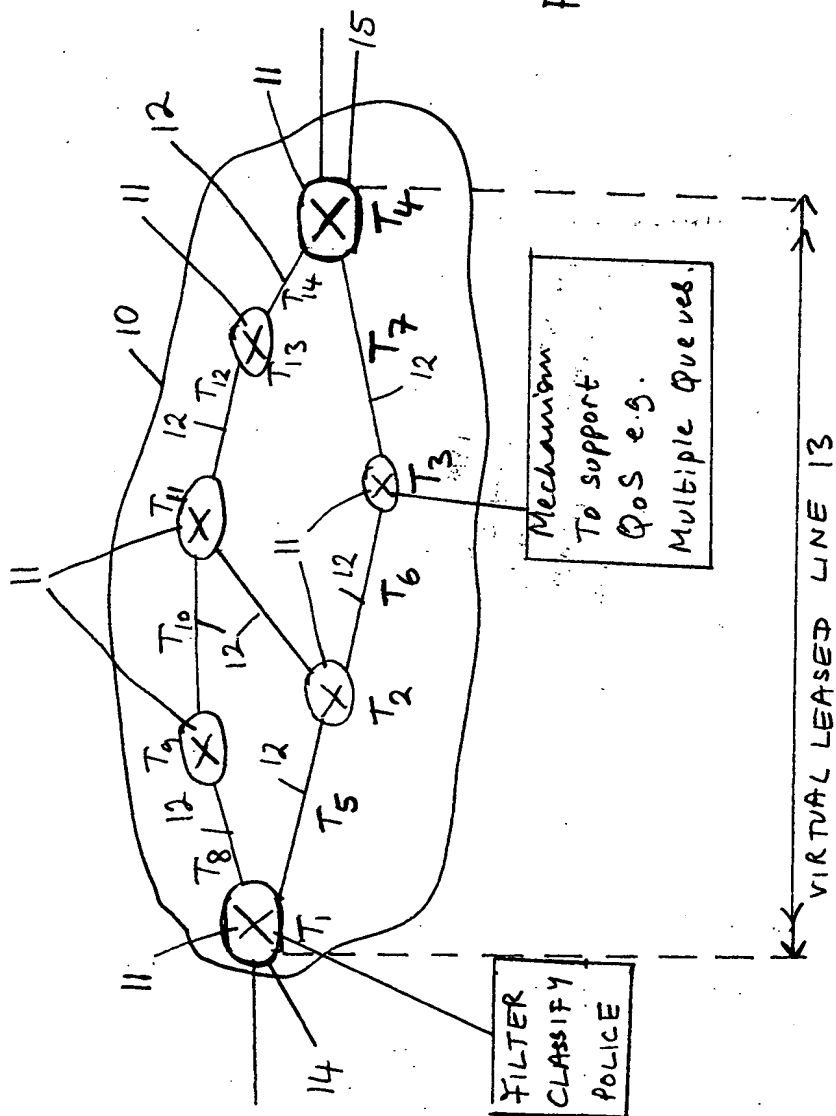


FIG 1

31.25

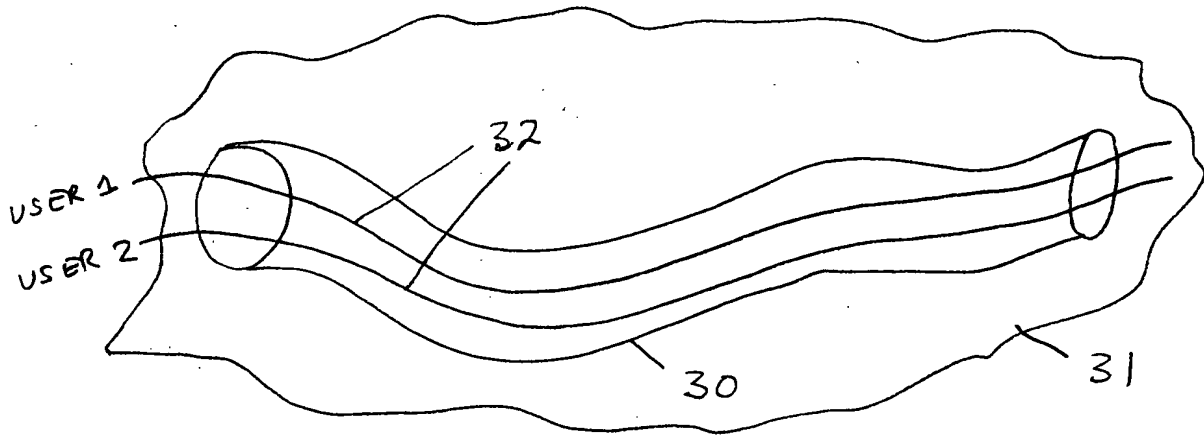


FIG 3

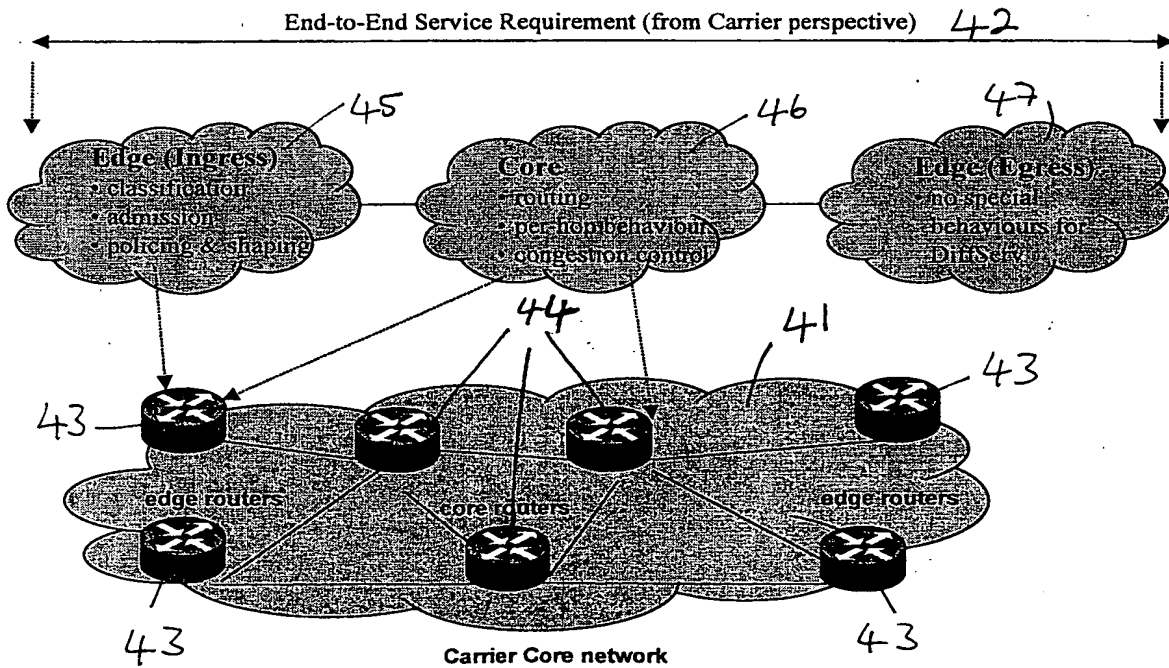
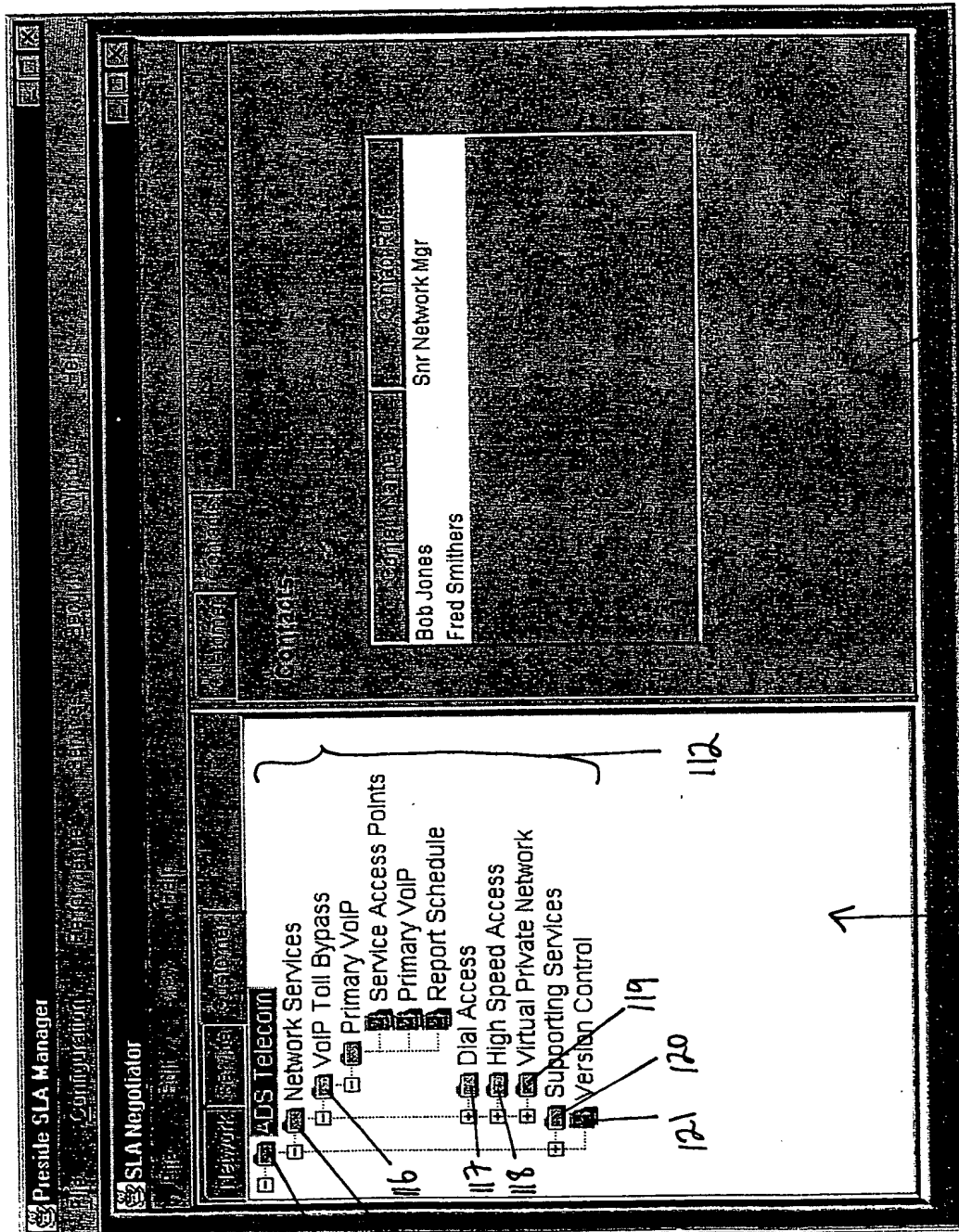


FIG 4

09541485 040300

5/25



110

FIG. 7

111

113

115

112

119

120

121

6/25



三

7/25

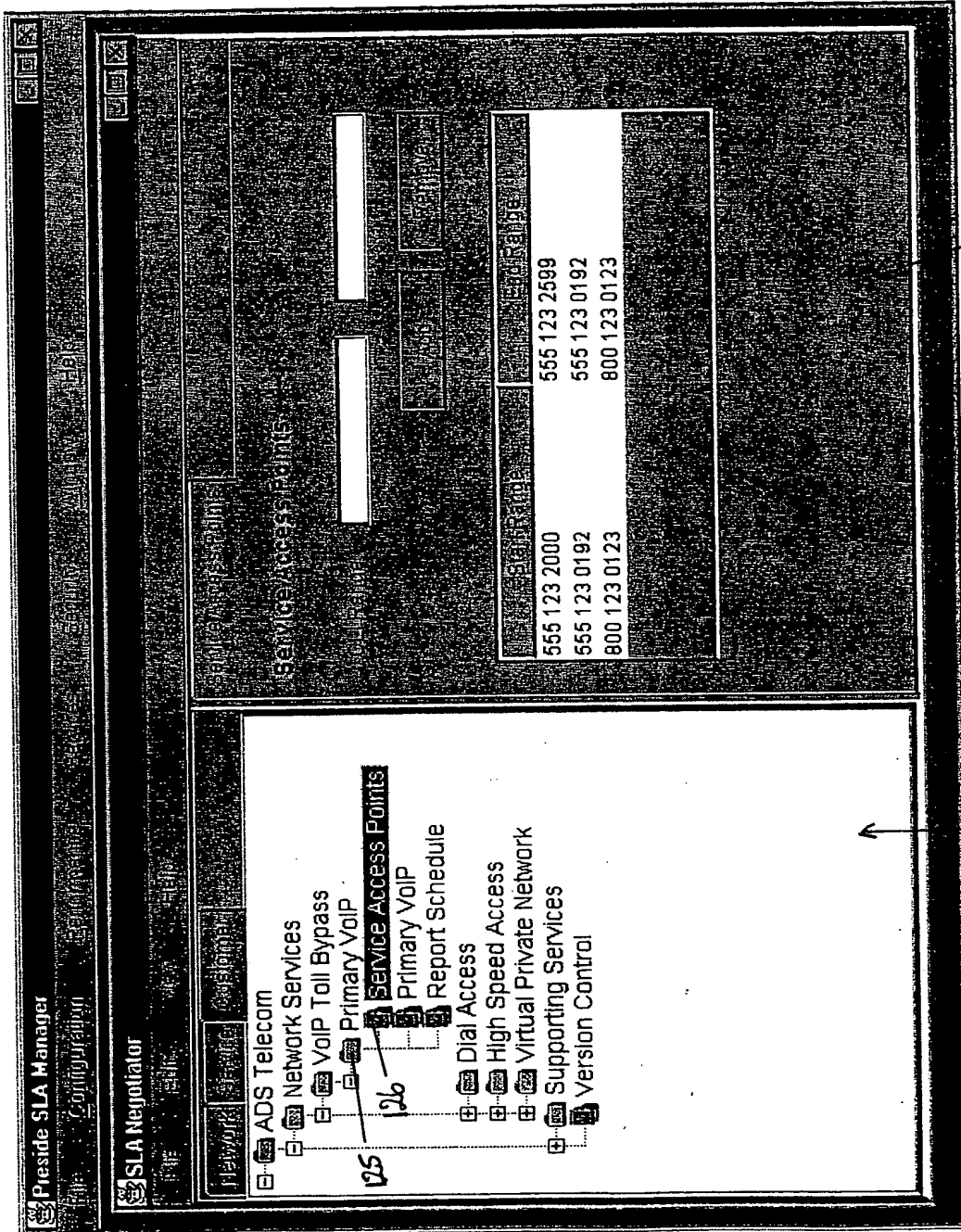


Fig 9

110

111

8/25

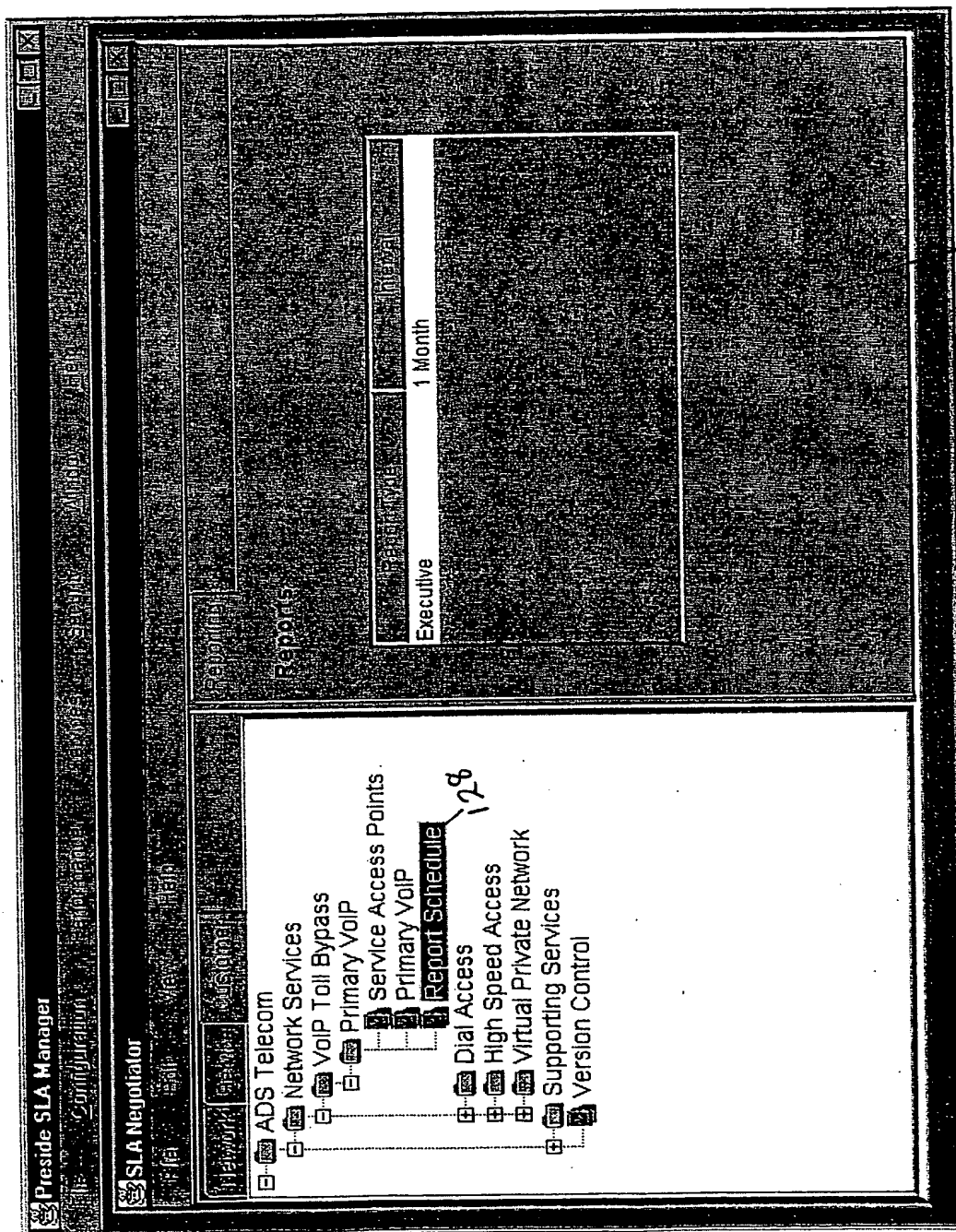


FIG 10 110

9/25

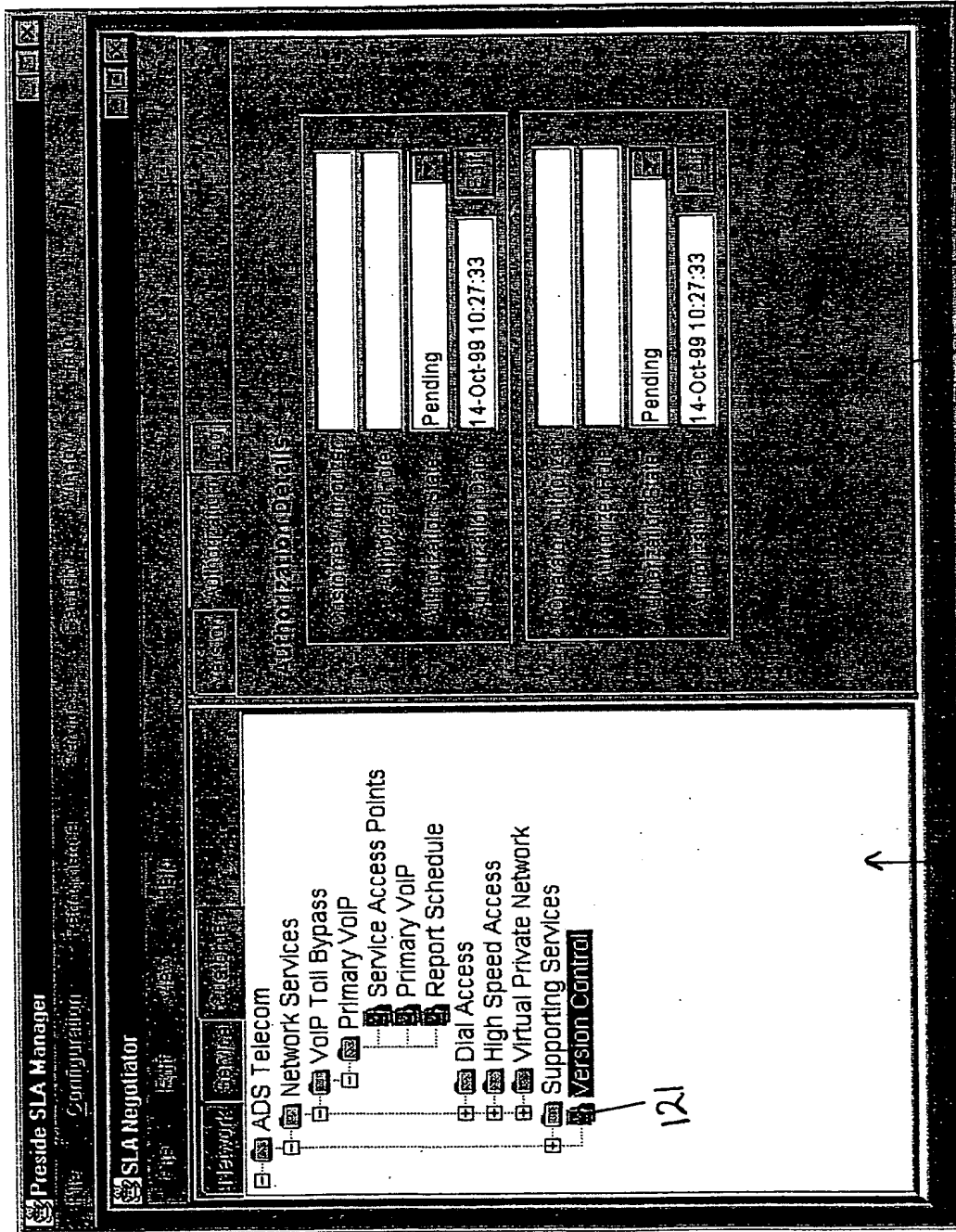


FIG 11

111

121

10 / 1.25

SLA Negotiator

File Edit View Help

Networks

Services

Configuration

Help

ADS Telecom

Network Services

VoIP Toll Bypass

Primary VoIP

Service Access Points

Primary VoIP

Report Schedule

Dial Access

High Speed Access

Virtual Private Network

Supporting Services

Version Control

Service

Service

Configuration

Help

Service Quality Objectives

Service Metric	Period	Target	Actual
Service Availability	1 Month	>= 99.98	100
Failed Call Percentage	1 Week	<= 4.0	100
Packet Jitter	1 Day	<= 10.0	99
Packet Latency	1 Day	<= 300.0	99
Packet Loss	1 Day	<= 3.0	100
Call Setup Delay	1 Week	<= 500.0	99.5
Abnormal Call Terminations	1 Week	<= 2.0	100

Fig 12 110

00E040 58774560

11/ 25

SLA Planner

File Edit View Help

Services Configuration

SLA Planner

- SLA Analyzer Tools
 - VoIP Toll Bypass
 - SLA Metric Planner
 - Compliance Analyzer
 - SLA Target Planner
- Dial Access
- High Speed Access
- Virtual Private Networks
- SLA Class of Service Templates
 - VoIP Toll Bypass
 - VoIP Bronze
 - VoIP Gold**
 - VoIP Silver
 - Dial Access
 - High Speed Access
 - Virtual Private Network

VoIP Gold

Services Details

Service Type	VoIP Toll Bypass
Service Name	VoIP_Gold
Service Value	VoIP_Gold
Start Date	01-Jan-00 00:00:00
Stop Date	31-Dec-04 00:00:00
Description	

Fig 13 110

12/ 25

The screenshot shows the 'SLA Service Specification Wizard' window. The title bar reads 'SLA Service Specification Wizard'. The main area is titled 'Customer Define'. It contains a 'Customer Name' field with the text 'ADS Telecom' and a 'New' button to its right. Below this is a 'Customer Address' field containing the text: 'ADS Telecom', 'Telecom House', 'P.O.Box 25443', 'California', and 'USA'. At the bottom of the window are four buttons: 'Cancel', 'Back', 'Next', and 'Finish'.

FIG 14

The screenshot shows the 'SLA Template Wizard' window. The title bar reads 'SLA Template Wizard'. The main area is titled 'Service Define'. It contains several fields: 'Service Type' with a dropdown menu showing 'VoIP Toll Bypass'; 'Based on' with a dropdown menu showing 'None'; 'SLA Name' with a text field containing 'VoIP Premium'; 'Start Date' with a date/time field showing '01-Jan-00 00:00:00' and an 'Edit' button; 'Stop Date' with a date/time field showing '31-Dec-99 23:59:00' and an 'Edit' button; and 'Description' with a large empty text area. At the bottom of the window are four buttons: 'Cancel', 'Back', 'Next', and 'Finish'.

FIG 15

09541185, 040300

13/25

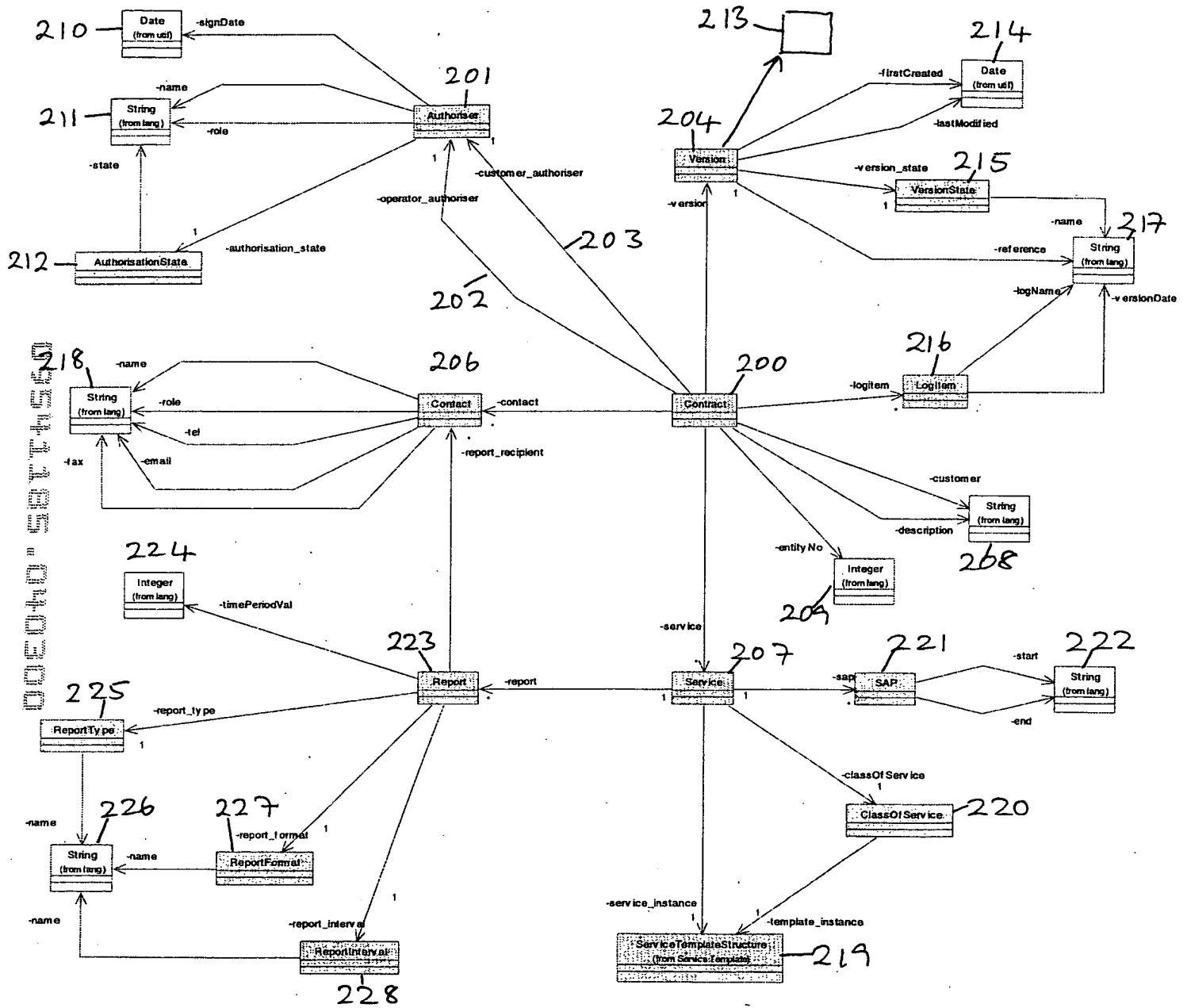


FIG 16

09541185 "040300"

14/25

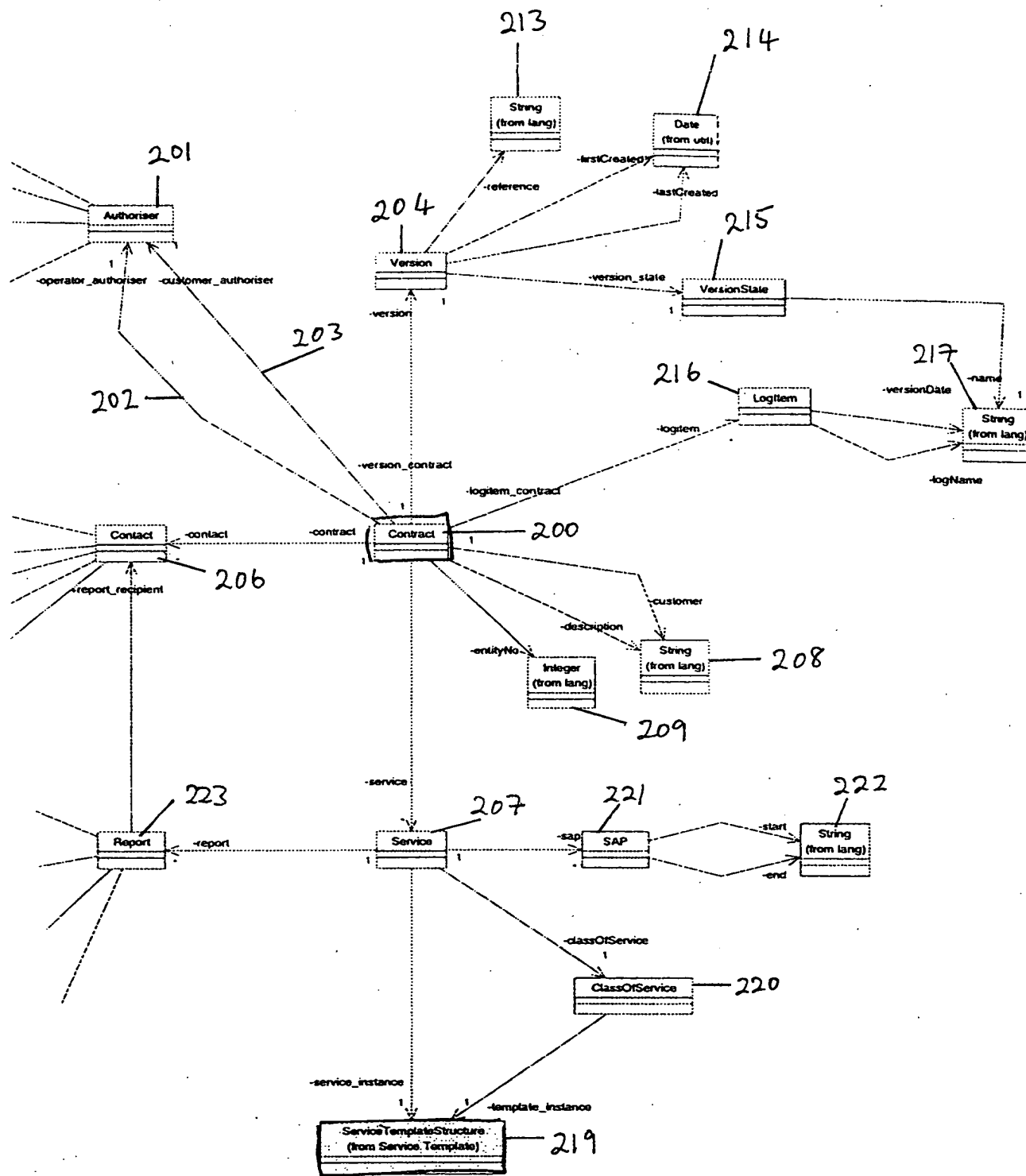


FIG 17

15/25

00541185 040300

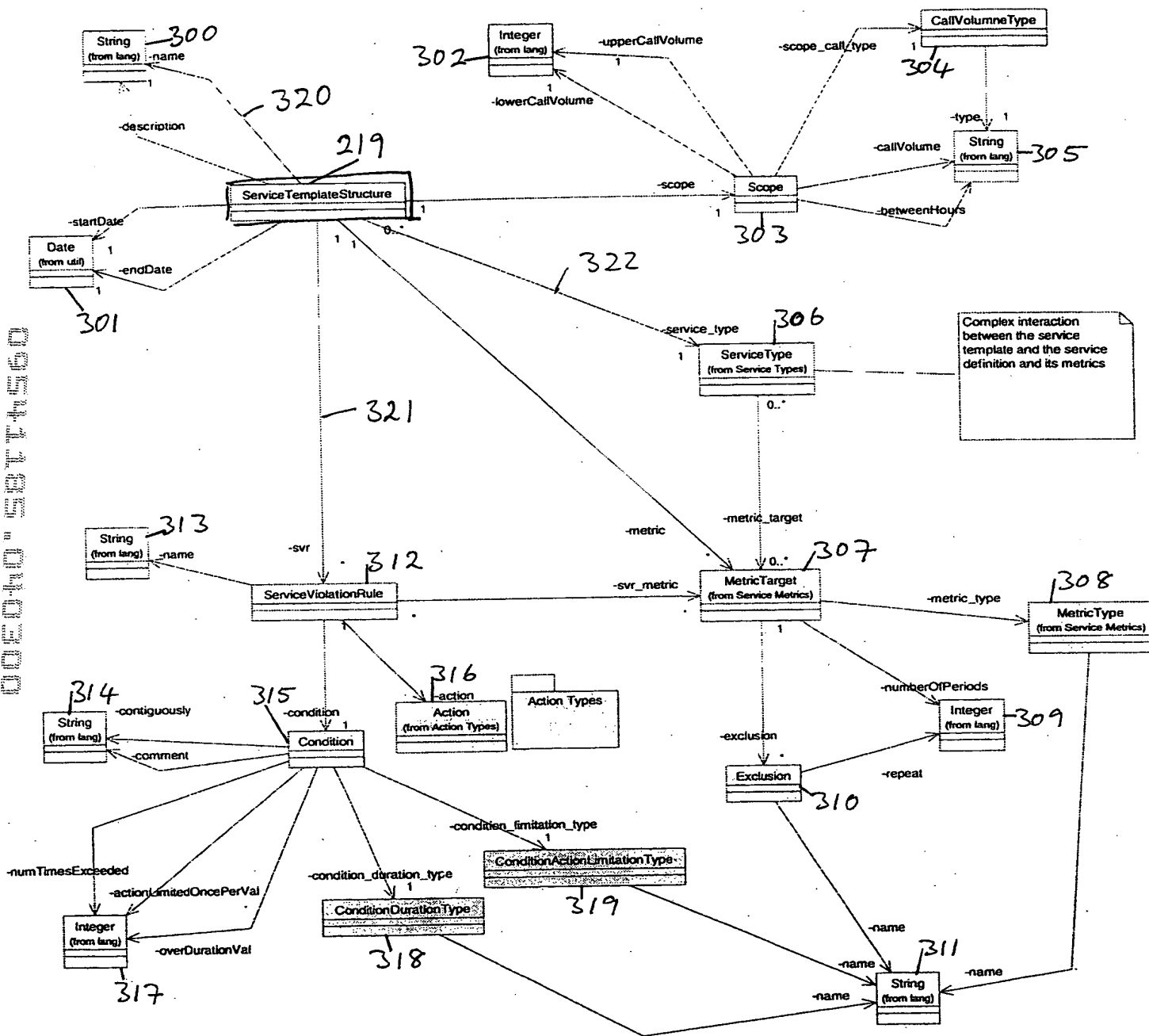
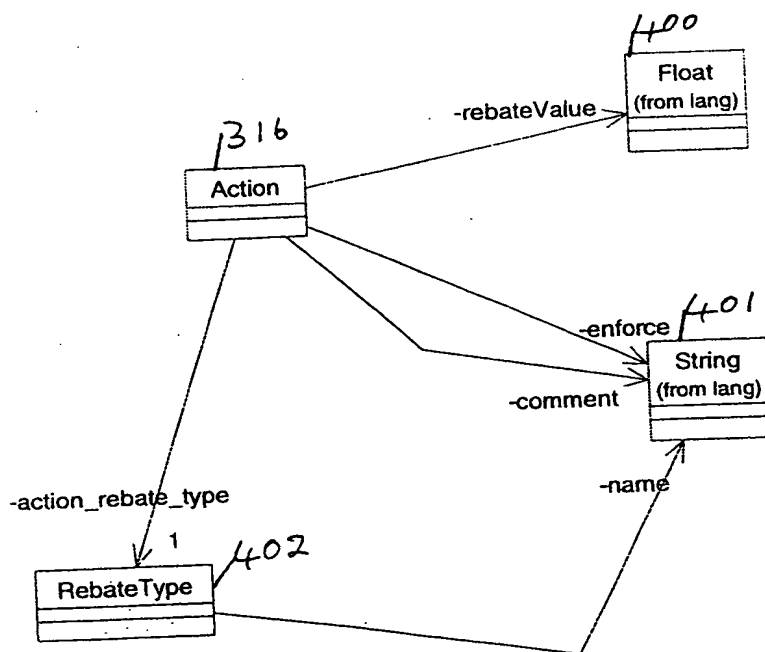
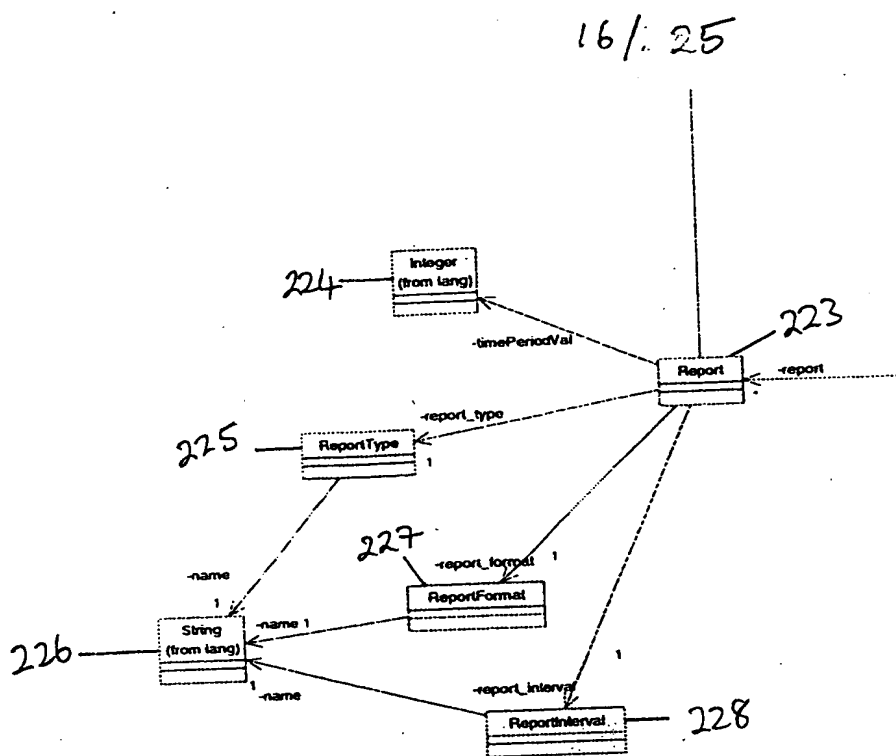


FIG 18

09541485 040300



17/25

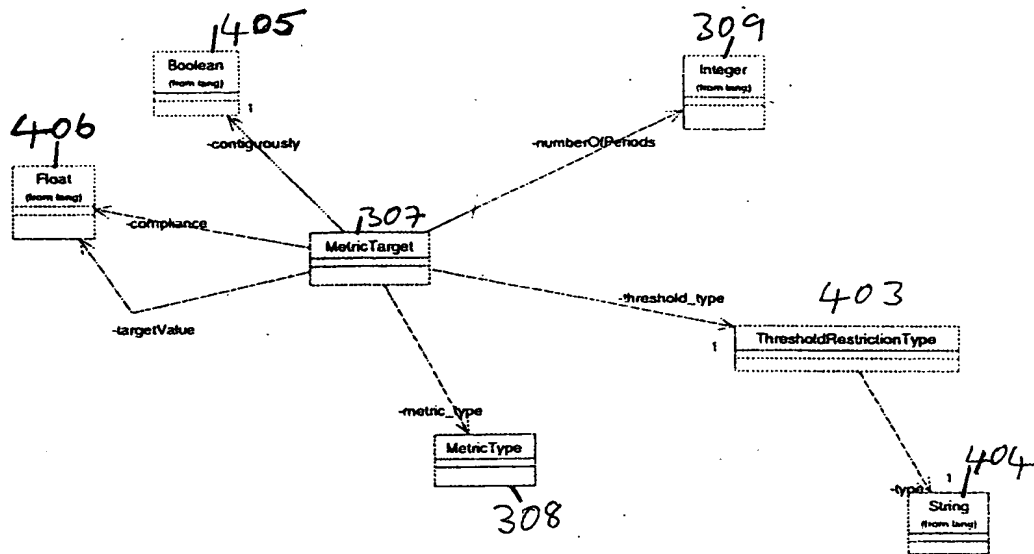


FIG 21

09541185.040300

006040" 58774560

18/25

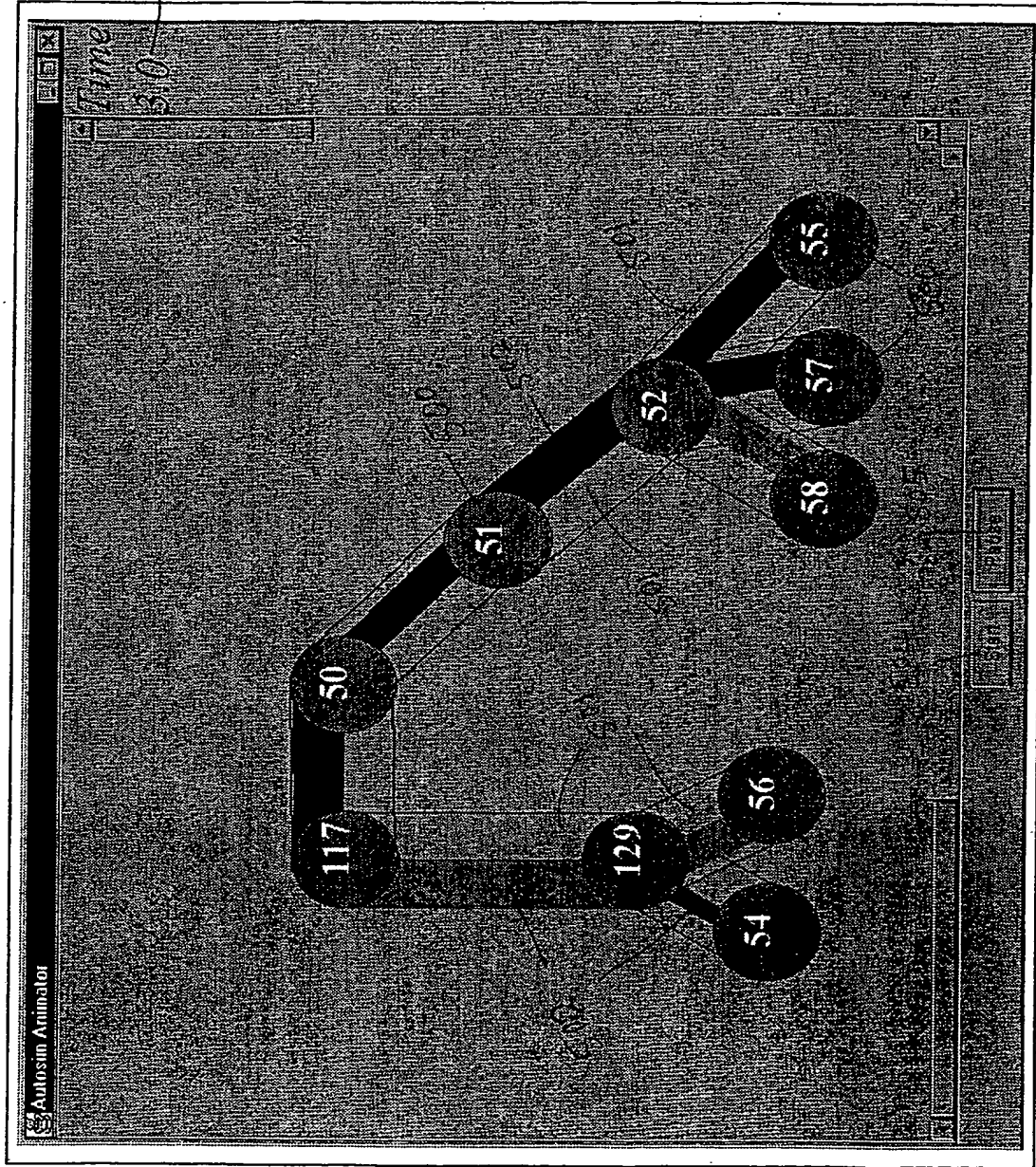


FIG 22

002040" SST4560

19/25

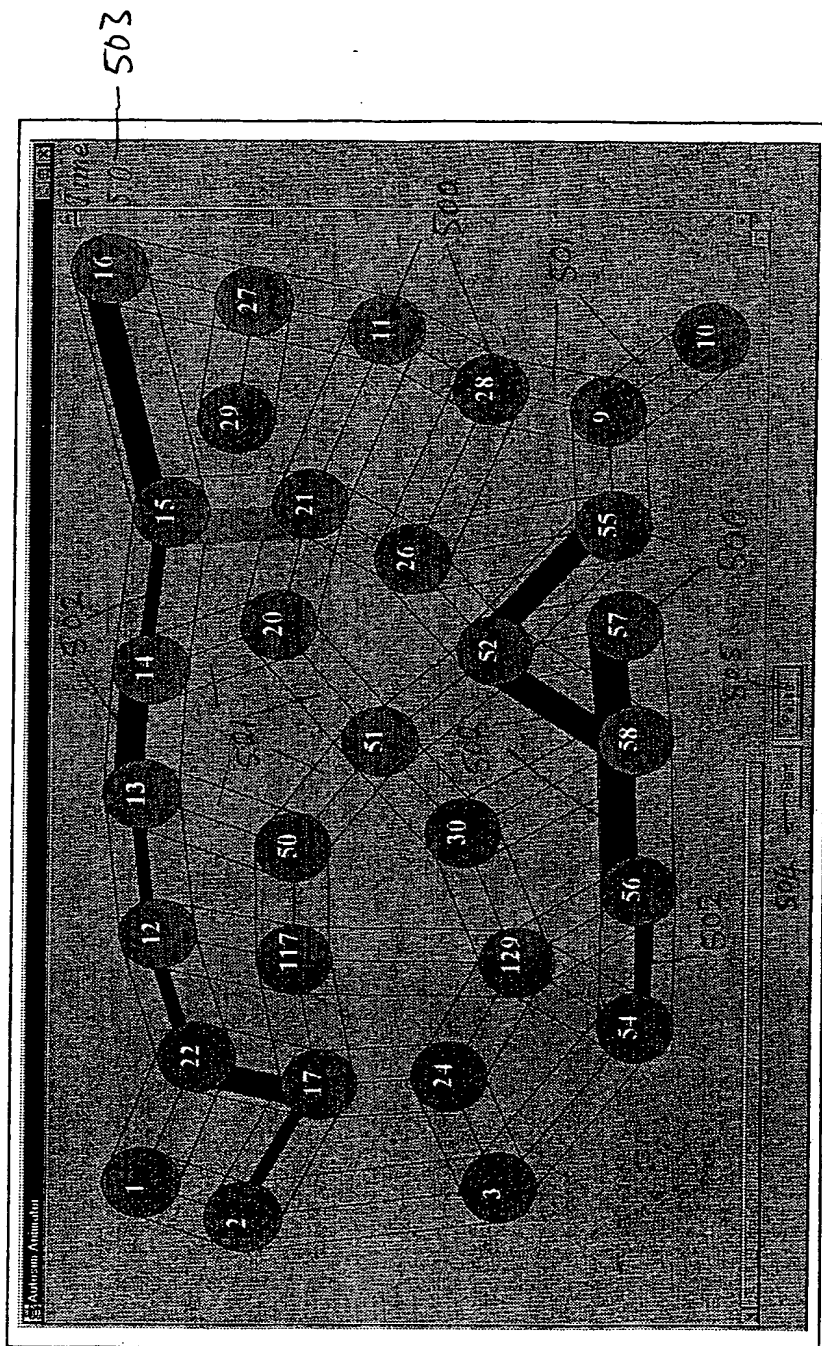


FIG 23

20/ 25

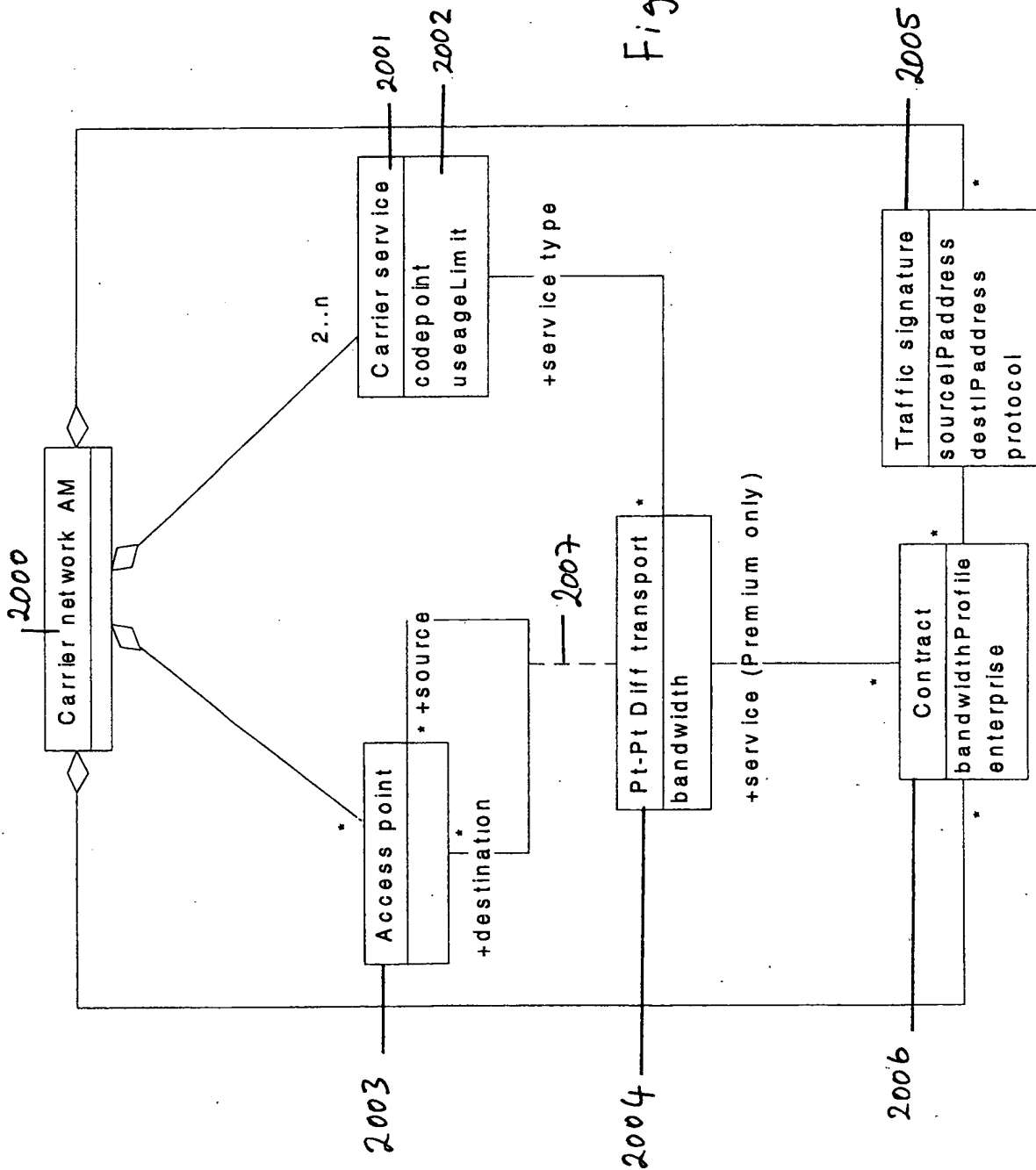
Flow

0.0010 t 286 215 230 166 14000.0
0.0010 t 240 217 230 166 50000.0
0.0010 t 199 216 230 166 50000.0
0.110375 t 286 215 230 166 14000.0
0.110375 f 286 215 230 166 14000.0
0.111375 t 230 166 185 116 14000.0
0.21975 t 286 215 230 166 14000.0
0.21975 f 286 215 230 166 14000.0
0.22075 t 230 166 185 116 14000.0
0.22075 f 230 166 185 116 14000.0
0.22175 t 185 116 136 69 14000.0
0.329125 t 286 215 230 166 14000.0
0.329125 f 286 215 230 166 14000.0
0.330125 t 230 166 185 116 14000.0
0.330125 f 230 166 185 116 14000.0
0.331125 t 185 116 136 69 14000.0
0.331125 f 185 116 136 69 14000.0
0.332125 t 136 69 77 70 14000.0
0.391625 t 199 216 230 166 50000.0
0.391625 f 199 216 230 166 50000.0
0.391625 t 240 217 230 166 50000.0
0.391625 f 240 217 230 166 50000.0
0.4385 t 286 215 230 166 14000.0
0.4385 f 286 215 230 166 14000.0
0.4395 t 230 166 185 116 14000.0
0.4395 f 230 166 185 116 14000.0
0.4405 t 185 116 136 69 14000.0
0.4405 f 185 116 136 69 14000.0
0.4415 t 136 69 77 70 14000.0
0.4415 f 136 69 77 70 14000.0
0.4425 t 77 70 77 159 14000.0

FIG 24

0954135 040300

21 / 25



22/25

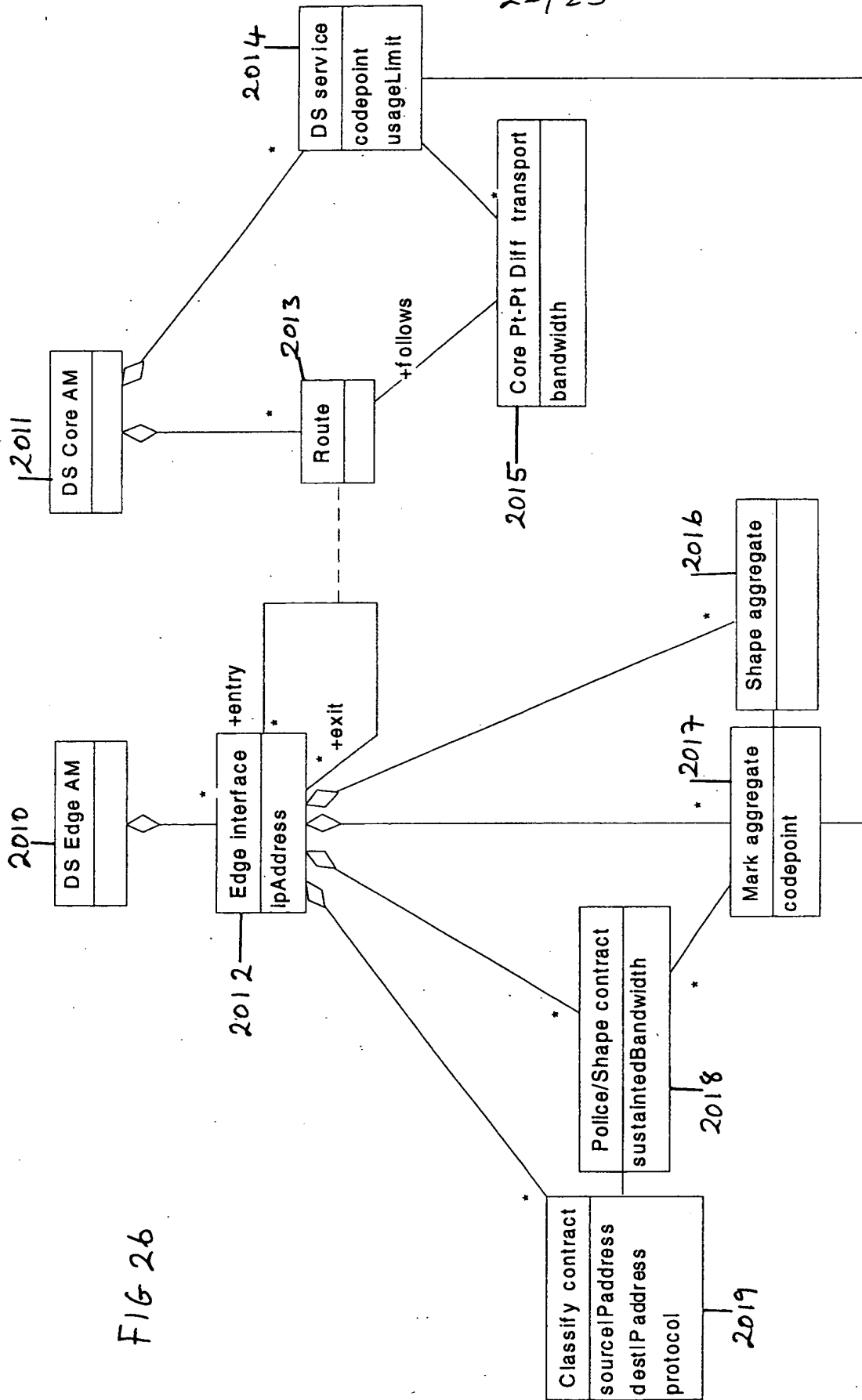


FIG 26

23/25

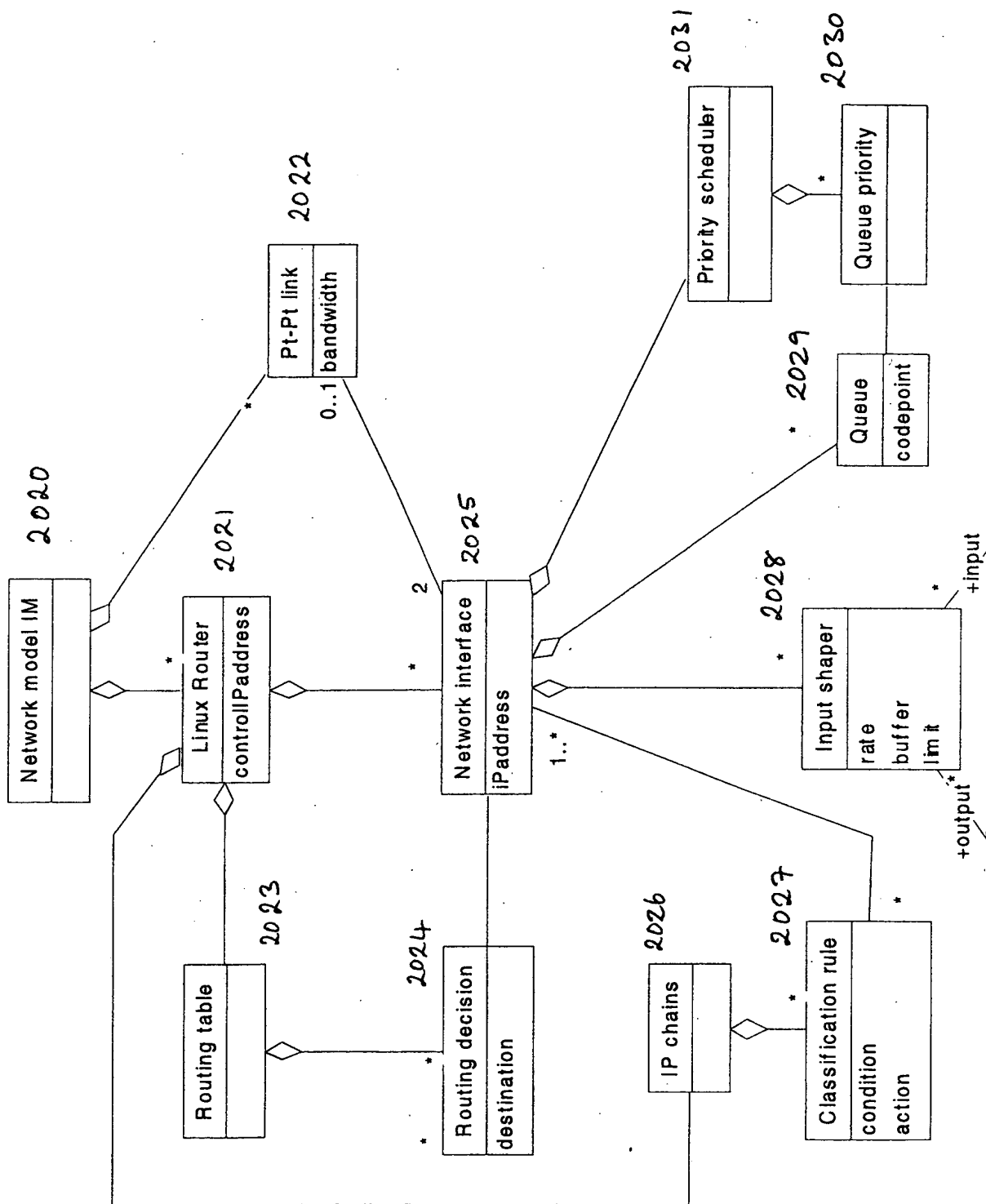


Fig 27

24/25

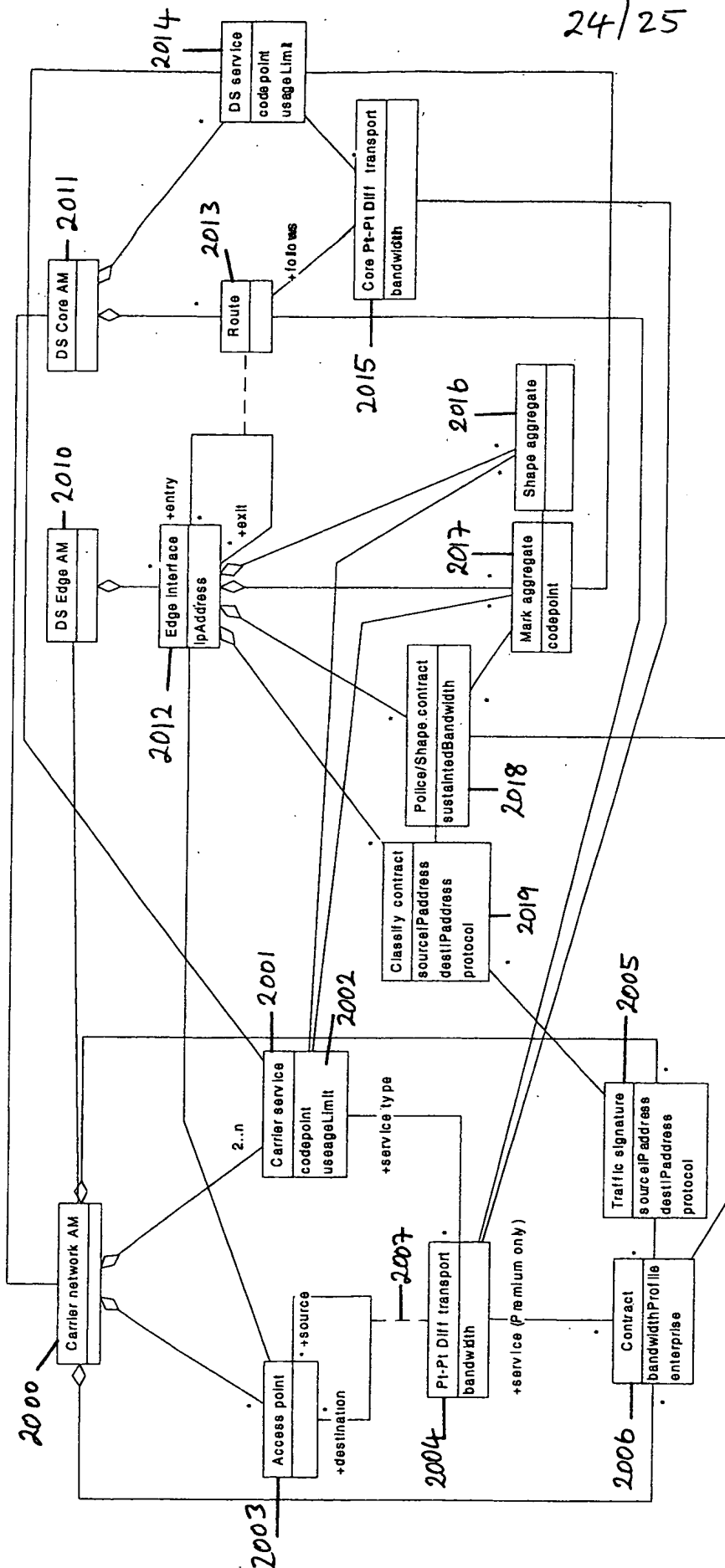
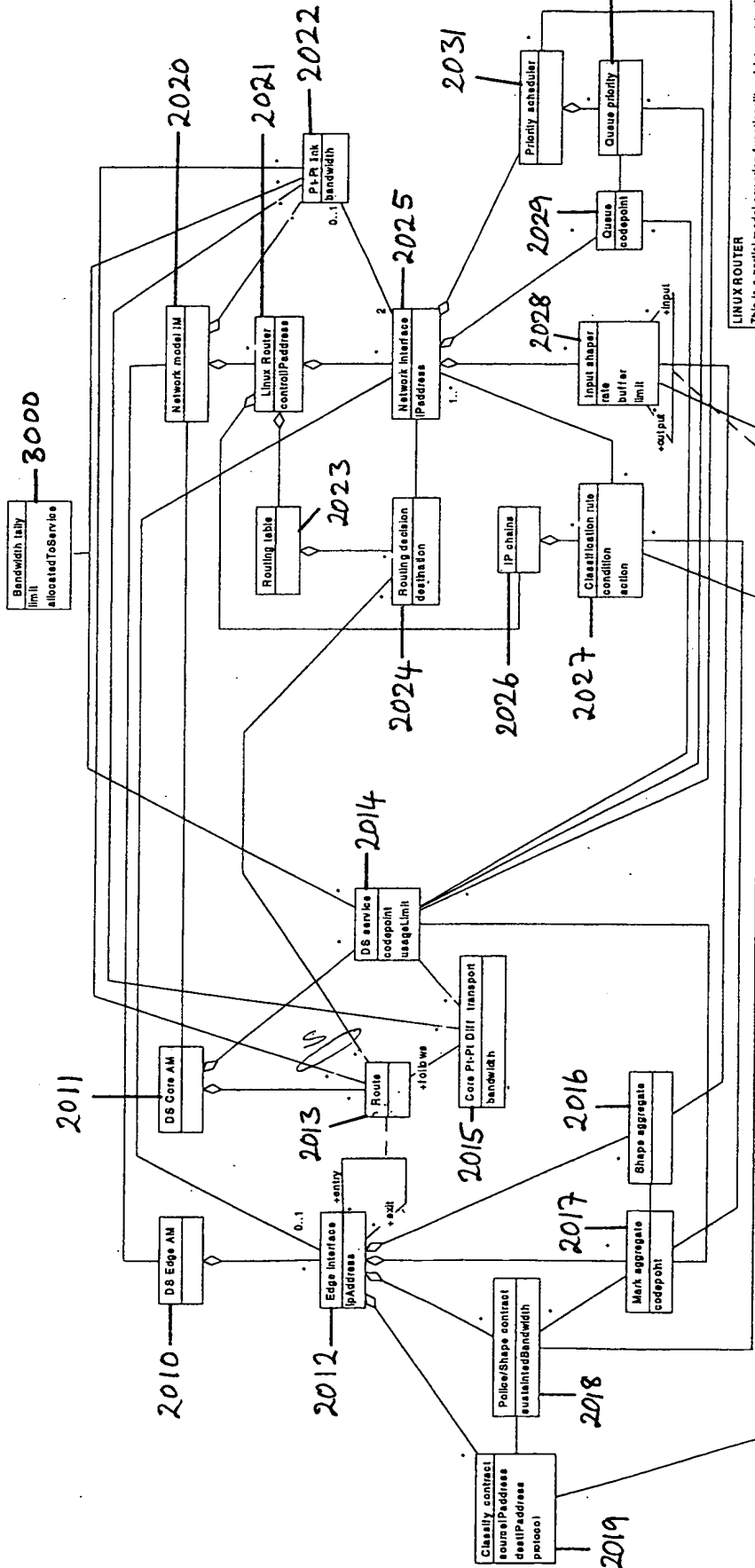


FIG 28

Instances of a number classes are only created when a contract requires them even though in theory they could exist as soon as diffserv support is introduced. These include Pt-Pt Diff transport in Carrier AM, Route and Core Pt-Pt Diff transport in DS Core AM. Traffic signatures can be shared by many contracts, but must be unique in the context of the source Access point so that the network operator can identify packets relating to a particular contract and treat them accordingly.

25/25



LINUX ROUTER
This is a partial model covering functionality of interest to this application. There is no IM as it is realised by a physical computer.

LINKS
This particular Network model uses point to point links between the routers. This reflects the configuration of the IP lab but is somewhat unusual. In Momentum terms this can be seen as a contraction which hides the realisation of the hop (connection between network interfaces) by lower layer objects.

INPUT SHAPER
The particular mechanism to implement an input shaper has not been identified yet and so a generic term is used.

IMPLEMENTATION NOTES
We could return specialisation of Network interface if useful for implementation. Specialising Network interface to show role (linked or edge) might give double-dispatching type benefit. Here we show the case where it has NOT been done, hence optional realisation, link relationships to Network interface.

The contract shapers (and the aggregate shapers. Hence this relationship is configured by the two realisation relationships.

The other flow relationships (input -> routing -> queuing -> output) are not configurable as all routers do the same. Hence they are not shown to keep the diagram simple(r).

FIG 29